

LIST OF THE AUSTRALIAN PALÆICHTHYES,  
WITH NOTES ON THEIR SYNONYMY  
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## PART II.

In this part are contained the remaining families of the Selachoidean *Palæichthyes*, namely, the *Notidanidæ*, *Scylliidæ*, *Heterodontidæ*, *Spinacidæ*, *Squatidæ*, and *Pristiophoridæ*: of these twenty-five species are enumerated, seven of which, *i.e.*, *Scylliorhinus analis*, *Ginglymostoma concolor*, *Stegostoma tigrinum*, *Parascyllium collare*, *Chiloscyllium punctatum*, *Crossorhinus dasy-pogon*, and *Echinorhinus spinosus*, have been added to the Australian fauna since 1884. Two of these (*S. analis* and *P. collare*) have been described since that date in the Proceedings of this Society, the former in Vol. x. p. 445, the latter in Vol. iii. (2) p. 1310; for the record of *E. spinosus* we are indebted to Prof. McCoy, who has done so much to elucidate the zoology of Victoria both fossil and recent; while that of *C. punctatum* is due to Dr. Klunzinger; the remaining three, being well-known species from the tropical waters of the Indian and Pacific Oceans, were certain to have been recorded sooner or later from our northern shores, as without doubt will many other species when our long and varied sea-board has been systematically examined.

In the present part the only points on which I feel any doubt concern (1) the correctness of the identification of Mr. Zietz's South Australian *Crossorhinus* with the *C. tentaculatus* of Dr. Peters, but in the present state of our knowledge of both forms it is perhaps better to follow Mr. Zietz, who, in a letter received

subsequently to the writing of my note on this species, informs me that he has decided to describe the South Australian fish as distinct under the name of *C. stirlingi*; (2) the propriety of separating the three alleged species of *Acanthias*, the characters of which I find to vary greatly; and (3) the specific value of *Pristiophorus nudipinnis*.

In connection with the synonymy I have felt it incumbent upon me to alter the names of the following genera:—*Notidanus* to *Heptanchus*, *Scyllium* to *Scylliorhinus*, and *Rhina* to *Squatina*.

### NOTIDANIDÆ.

#### HEPTANCHUS, Rafinesque (1810).

21. *H. INDICUS*, *Cuv., sp.* Coast of New South Wales, common. The "Seven-gilled Shark." Victoria, one of the rarer sharks in Hobson's Bay (*McCoy*). Tasmania (*Allport, MS.*). Rafinesque's excellent name having the priority of that of Cuvier by several years, I can see no reason whatever for its rejection, and I therefore unhesitatingly adopt it. The increased number of the gill-openings being the more important of the two principal differences between this and the two preceding families, I am at a loss to understand—seeing that a genus is merely a number of species, having two or more characters in common, placed in juxtaposition for the sake of convenience—how Rafinesque's two generic names can be ignored.

### SCYLLIIDÆ.

#### SCYLLIORHINUS, Blainville (1816).

22. *S. MACULATUS*, *Bl. Schn., sp.* North-western coast of Australia. Bramble Bay (*Brit. Mus.*). Port Darwin (*Macleay Mus.*). The genus *Scylliorhinus* having been established by Blainville in 1816, takes precedence of Cuvier's *Scyllium* by thirteen years, and must therefore be retained.

\*23. *S. ANALIS*, *Ogilby*, *sp.* Port Jackson, and its vicinity (*Austr. Mus.*), common; the "Spotted Dog-fish." I have been unable to ascertain the northern limit of the range of this species, which is at a glance distinguishable from the preceding by the non-confluence of the nasal valves; it should, however, be compared with the Japanese *S. buergeri*, to which it seems to be nearly related. Mr. Johnston in his "Catalogue of Tasmanian Fishes" includes *S. maculatus*, and states that the "nasal valves are confluent"; this would of course be conclusive evidence as to the non-identity of the Tasmanian with my species, but as his short diagnosis is evidently taken word for word from Dr. Günther's catalogue description of the true *S. maculatus*—Mr. Johnston not having personally examined a Tasmanian specimen—I consider it highly probable that my species has been mistaken for the northern one.

24. *S. LATICEPS*, *Dum.*, *sp.* Tasmania.

Note.—This Dog-fish has a very wide range in the Pacific, having been recorded as abundant in New Zealand waters (*Sherrin, Handbook of the Fishes of N.Z.*, p. 121), and more recently from the Californian coast by Messrs. Jordan and Gilbert.

GINGLYMOSTOMA, Müller and Henle (1837).

\*25. *G. CONCOLOR*, *Rüpp.*, *sp.* Port Moresby, New Guinea (*Macleay*). In the British Museum Catalogue of Fishes, viii. p. 409, Dr. Günther mentions as adult an example which measures twenty-eight inches only, but he unfortunately omits to mention the sex of the specimen; I hardly think that the term "adult" can be correctly applied to this example, since a male from the Solomon Islands, in the collection of the Australian Museum, though measuring no less than sixty-six inches, is presumedly immature, the claspers being but little developed. Of course there is a possibility that the individual in question

may have sustained some injury which has resulted in a partial or even permanent arrest in the development of the sexual organs, which would at once account for the possibly abnormal decreasence in the size which these have attained in our specimen, and being barren, for its increased size.

STEGOSTOMA, Müller and Henle (1837).

- \*26. *S. TIGRINUM*, *Gmel., sp.* Cape York, Q. (*Austr. Mus.*).

PARASCYLLIUM, Gill (1861).

27. *P. VARIOLATUM*, *Dum., sp.* Tasmania. As with the two succeeding species this Dog-fish appears to be individually scarce, since from his short note on the subject it does not seem that Mr. Johnston has ever met with a recent example. I think it highly probable that the cause of this apparent scarcity will be found to be due to the ordinary habitat of the genus being in deep water, or at least in water of such a depth as to exceed the limits to which the professional fishermen of these coasts confine themselves.
- \*28. *P. COLLARE*, *R. & O.* Outside Port Jackson, N.S.W., in seventy fathoms (*Austr. Mus.*); *vide* P.L.S. N.S.W. iii. (2) 1888, p. 1310.
29. *P. NUCHALE*, *McCoy.* Port Phillip, Vic. (*McCoy*), scarce.

CHILOSCYLLIUM, Müller and Henle (1837).

30. *C. OCELLATUM*, *Gmel., sp.* Port Jackson, N.S.W. (*Austr. Mus.*), rare. North coast of Australia. Port Moresby, New Guinea (*Austr. Mus.*), common. Richardson's *C. trispeculare* is merely a variety of this species.
- \*31. *C. PUNCTATUM*, *M. & H.* Port Darwin, North-western Australia (*Klunzinger*).
32. *C. MODESTUM*, *Gnth.* East coast of Australia, common. The "Brown Dog-fish" of Port Jackson.

## CROSSORHINUS, Müller and Henle (1837).

33. *C. BARBATUS*, *Gmel., sp.* The "Carpet Shark" or "Wobbe-gong." Southern and eastern coasts of Australia, common. Tasmania, common (*Johnston*). Port Moresby, New Guinea (*Macleay*).

*Note*—Mr. S. Scudder (*Zool. Nom., Univ. Index, p. 67*) gives the orthography of the generic title as *Chrossorhinus*, but in this he is undoubtedly incorrect, as the first part of the word is derived from the Greek *κροσσος* a tassel—generally used in the plural in the sense of a fringe.

34. *C. TENTACULATUS*, *Ptrs.* Cape York, Q. (*Brit. Mus.*) Port Adelaide, S.A. (*Zietz*); examples from the latter locality are contained in the collections of the Australian Museum, Sydney, and of the South Australian Museum, Adelaide. Though very closely allied, the differences, should they prove constant, are sufficient to justify the separation of this from the preceding species. Taking the various characters mentioned in the description given by Dr. Günther seriatim, I find that the number of tentacles is inconstant, and this character therefore loses much of its value; thus in our specimen there are on each side a single minute tentacle on the side of the throat directly under the upper angle of the spiracle, two rather larger a little above and behind the angle of the mouth; a small one on the middle of the hinder section of the upper lip; a short broad strongly compressed lobe at the upper angle of the maxilla, and a similar lobe in the lower angle of the inter-maxillary cleft, and finally a narrow tentacle, equal in length to the spiracle, rises from the inner angle of the lingual flap; all these appendages are simple, whereas in *C. barbatus* the majority are as a rule bifid, and some occasionally trifid, while they are always

more numerous and of larger size. The second character brought prominently forward in Dr. Günther's description is the comparative distance between the dorsal fins, which is stated by him to be "equal in length to the base of the first dorsal" in *C. barbatus*, and "much less than the length of the base of either dorsal" in *C. tentaculatus*. This character is entirely fallacious; there is now before me a specimen of an undoubted *C. barbatus*, from Port Jackson, in which the intra-dorsal distance is quite as small as in our example of *C. tentaculatus*, being but little more than one-half of the length of the base of the first dorsal; and further among specimens of the former of both sexes and all sizes up to seven feet I have not found a single example in which the intradorsal space was even approximate in length to the base of the anterior dorsal. The colours are also very variable, and are probably similar in both forms, *C. barbatus* being as often as not broadly fasciated with brown. The characters therefore on which Drs. Peters and Günther rely for the specific separation of the two forms are thus proved to be inconstant, and so absolutely valueless from a scientific point of view. We have therefore to look for other characters by which to separate the two supposed species, and these I am unable to find, for if we except the slightly finer granulation of the epiderm, there is positively no character on which reliance can be placed. Our specimen, however, has very distinct hard tubercles on the dorsal surface forming either scattered patches or irregular longitudinal rows, as well as a crescentic row of much smaller ones above the eyes, a similar row between the orbit and the anterior gill-opening, and some scattered ones on the snout and cheeks. As, however, neither its describer nor Dr. Günther makes any reference to these tubercles it is probable that this is either an individual peculiarity—the varieties of *Chiloscyllium indicum* form a fairly parallel case—or was caused by the specimen having been left on

the pier† and so exposed to the weather for an indefinite length of time, which may have raised blisters which no stretching of the skin could eradicate. As I have examined only this one specimen in very bad condition it would be inexpedient for me to give an authoritative opinion as to the identity or non-identity of the two forms, but I feel pretty sure that a characteristic series of both would indubitably demonstrate their specific identity. Under the circumstances, however, this is merely an opinion founded on that single specimen, and has to be verified by the examination of a more extended series.

*Note.*—Dr. Peters could hardly have devised a more inappropriate specific name for this shark. In the first place all the members of the genus are furnished with tentacular appendages, and in the second place *C. barbatus* and *C. dasyogon*, both indubitably good species, are much more amply provided with these appendages, so that as a fact Dr. Peters' species instead of being *par excellence* the "Tentaculated Wobbegong," as its name would imply, is exactly the reverse.

\*35. *C. DASYPOGON*, *Blk.* Torres Straits (*Austr. Mus.*)

## HETERODONTIDÆ.

HETERODONTUS, Blainville (1816).

36. *H. PHILLIPI*, *Bl. Schn., sp.* Coast of New South Wales, common at least as far north as Broken Bay, above which I have been unable to trace it, though it doubtless occurs. Coast of Victoria; Port Phillip, common (*McCoy*). South Australia (*Brit. Mus.*). Tasmania, "common in the Derwent and Tamar" (*Johnston*). For reasons given previously I am obliged to adopt Blainville's generic

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† Found lying on the Semaphore Jetty about one year ago. It was caught by one of the fishermen, and thrown away as being useless (*Zietz, in lit.*).

name, it having a priority of a year over Cuvier's *Cestracion*, even were that name admissable, which as I have conclusively shewn (P.L.S. N.S.W., iii. (2) 1888, p. 1770), is not the case; for the same reason it would be absurd to continue to employ the commonly accepted family name *Cestraciontidae*, and being unable to find an older name I have adhered to that used in my Catalogue of the Fishes of New South Wales, 1886.

37. *H. GALEATUS*, *Gnth.*, *sp.* Port Jackson, almost as common as *H. phillipi*. Port Stephens, N.S.W. (*Austr. Mus.*). These are the only localities whence we have ever received it.

*Note.*—For detailed accounts of this and the preceding species see Miklouho-Maclay and Macleay, P.L.S. N.S.W., iii. pp. 309, 313, pls. 22-25.

### SPINACIDÆ.

#### ACANTHIAS, Risso (1826).

38. *A. VULGARIS*, *Rss.* Coast of Victoria (*McCoy*). Tasmania, very abundant (*Johnston*).
39. *A. BLAINVILLII*, *Rss.* New Holland (*Günther*). Tasmania, abundant (*Johnston*).
40. *A. MEGALOPS*, *Mcl.* Neighbourhood of Port Jackson, not uncommon, but rarely taken inside the Heads. This form, distinguished by the forward position of the ventral fins, is the only one I have met with here, and appears to be in many points intermediate between the two others; eventually it is probable that the three will have to be joined together under a common name.

#### ECHINORHINUS, Blainville (1816).

- \*41. *E. SPINOSUS*, *Gmel.*, *sp.* Portland, Vic. (*McCoy*). This is the only specimen as yet recorded from Australian waters.



## ISISTIUS, Gill (1864).

42. *I. BRASILIENSIS*, Q. & G., *sp.* Australia (*Kner*).

## SQUATINIDÆ.

## SQUATINA, Duméril (1806).

43. *S. VULGARIS*, *Rss.* New South Wales. Though it is doubtless found further north, I have not succeeded in obtaining any authentic information of its occurrence beyond the neighbourhood of Port Jackson, where, however, it is common. Victoria, "not very uncommon in Hobson's Bay and round our coast" (*McCoy*). Tasmania, common (*Johnston*). Various known as the "Angel-fish," "Angel-Shark," or "Monk-fish." Klein's name, *Rhina*, having been published as early as 1745 becomes inadmissible, which is just as well since Olivier in 1807 gave the same appellation to a genus of coleopterous insects, for which it is still retained. Duméril's name therefore very properly stands.

## PRISTIOPHORIDÆ.

## PRISTIOPHORUS, Müller &amp; Henle (1837).

44. *P. CIRRATUS*, *Lath., sp.* New South Wales, northwards to Broken Bay, common. Tasmania, not common (*Johnston*). South Australia (*Brit. Mus.*). The "Saw-Shark."
45. *P. NUDIPINNIS*, *Gnth.* Hobson's Bay, Vic., very common (*McCoy*). Tasmania (*Johnston*). South Australia (*Zietz*). I agree with Messrs. McCoy and Zietz as to the very doubtful propriety of separating this from the preceding species.